

Application No. 10/625,080
Response to Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claims 1-14 have been canceled, and new claims 15-25 have been added.

New independent claim 15 corresponds to the subject matter of (now canceled) claims 1, 3, 5 and 6.

And new claims 16-25 depending from claim 15 correspond to the subject matter of (now canceled) claims 2, 4 and 7-14.

No new matter has been added, and it is respectfully requested that new claims 15-25 be approved and entered.

THE PRIOR ART REJECTION

Claims 1-4, 7-9, 11, 13 and 14 were rejected under 35 USC 103 as being obvious in view of the combination of USP 6,628,501 ("Toyoda") and USP 6,673,224 ("Shirai"), and claims 5, 6 and 10 were rejected under 35 USC 103 as being obvious in view of the combination of Toyoda and Shirai with USP 6,445,565 ("Toyoda et al"). These rejections, however, are respectfully traversed with respect to new claims 15-25.

On page 3 of the Office Action, the Examiner acknowledges that Toyoda does not disclose the features of the present

Application No. 10/625,080
Response to Office Action

Customer No. 01933

invention recited in new independent claim 15 whereby the gas sensitive film has a linear thermal expansion coefficient of at least 2×10^{-5} per degree centigrade, and whereby the first and second electrodes have a linear thermal expansion coefficient which is substantially the same as the linear thermal expansion coefficient of the insulating substrate and which is not more than 1×10^{-5} per degree centigrade. For this reason, the Examiner has cited Shirai to supply the missing teachings of Toyoda.

It is respectfully submitted, however, that Toyoda and Shirai are not properly combinable under 35 USC 103.

As recognized by the Examiner, Shirai does disclose that the linear thermal expansion coefficient is substantially the same for the first insulation porcelain 21, glass sealing member 25 and the sensor element 15 thereof. It is respectfully pointed out, however, that Shirai is related to a method of sealing a gas chamber and a reference gas chamber by means of a sealing member separate from the sensor and the insulation porcelain. According to Shirai, the glass sealing member 25 has a coefficient of thermal expansion which is close to the coefficients of thermal expansion of the first insulation porcelain 21 and the sensor 15 to avoid cracks in the sealing member which allow gas to pass therethrough.

By contrast, Toyoda is directed to a capacitive moisture sensor, which clearly does not face the problem solved by Shirai,

Application No. 10/625,080
Response to Office Action

Customer No. 01933

whereby gas leaks from a measured gas chamber to a reference chamber. That is, it is respectfully submitted that Toyoda is not at all related to the problem addressed by Shirai of maintaining the integrity of a sealing member. Indeed, Toyoda does not even disclose a sealing member which is provided separately from the insulation and the sensor. And it is respectfully submitted that one of ordinary skill in the art would not turn to the gas sensor disclosed by Shirai to modify the moisture sensor of Toyoda, which clearly has a different structure and is not related to the same problem as Shirai.

Accordingly, it is respectfully submitted that Toyoda and Shirai are not properly combinable under 35 USC 103.

In addition, it is respectfully submitted that even if Toyoda and Shirai were properly combinable in the manner suggested by the Examiner, the claimed structural features of the present invention as recited in new independent claim 15 still would not be achieved or rendered obvious.

On page 3 of the Office Action, the Examiner asserts that Shirai discloses the feature of the present invention whereby the gas sensitive film has a linear thermal expansion coefficient of at least 2×10^{-5} per degree centigrade. The Examiner refers to column 6, lines 39-44 of Shirai to support this assertion.

It is respectfully pointed out, however, that this portion of Shirai actually discloses that the linear thermal expansion

Application No. 10/625,080
Response to Office Action

Customer No. 01933

coefficient of the sensor element 15 is within $\pm 3 \times 10^{-6}$ per degree centigrade of the linear thermal expansion coefficient of the glass sealing member 25, which is preferably 7.0 to 8.2×10^{-6} per degree centigrade. Thus, even the maximum value of the coefficient of linear thermal expansion of the sensor 15 of Shirai is not 2×10^{-5} per degree centigrade. And it is therefore respectfully submitted that Shirai does not disclose, teach or suggest the feature of the present invention whereby the gas sensitive film has a linear thermal expansion coefficient of at least 2×10^{-5} per degree centigrade.

Accordingly, it is respectfully submitted that even if Toyoda and Shirai were combinable in the manner suggested by the Examiner, the claimed structural features of the present invention as recited in new independent claim 15 still would not be achieved or rendered obvious.

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In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

Application No. 10/625,080
Response to Office Action

Customer No. 01933

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,


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